Deptt. of Civil Engg.
Govt. Polytechnic Kinnaur
Lesson Plan

Name of teacher :- Shashank Sharma
Session:- Jan-June 2024
Subject :- ~~CSMAD~~ CMA
Total Periods: Theory-56, Practicals-Nil
Class:- 6th sem.

S.No	Period No.	Topic/Practical	Details of topic/practical	Remarks
1	1-6	Introduction	1.1 Significance of construction management 1.2 Main objectives of construction management and overview of the subject 1.3 Functions of construction management, planning, organising, staffing, directing, controlling and coordinating, meaning of each of these with respect to construction job. 1.4 Classification of construction into light, heavy and industrial construction 1.5 Stages in construction from conception to completion	
2	7-14	Construction Planning	2.1 Importance of construction planning 2.2 Stages of construction planning - Pre-tender stage - Contract stage, construction contracts and specifications 2.4 Scheduling construction works by bar charts - Definition of activity, identification of activities though - Limitations of bar charts 2.5 Scheduling by network techniques - Introduction to net work techniques; PERT and CPM, differences between PERT and CPM terminology 2.6 CPM Network including critical activities, slack, floats & critical path.	
3	15-17	Organization	3.1 Types of organizations: Line, line and staff, functional and their characteristics	
4	18-22	Site Organization	4.1 Principle of storing and stacking materials at site 4.2 Location of equipment 4.3 Organizing labour at site 4.4 Site layout of construction project	
5	23-27	Construction Labour	5.1 Conditions of construction workers in India, wages paid to workers 5.2 Important provisions of the following Acts: - Labour Welfare Fund Act 1936 (as amended) - Payment of Wages Act 1936 (as amended) - Minimum Wages Act 1948 (as amended)	
6	28-32	Control of Progress	6.1 Methods of recording progress 6.2 Analysis of progress 6.3 Taking corrective actions keeping head office informed 6.4 Arbitration and settlement.	
7	33-37	Inspection and Quality Control	7.1 Need for inspection and quality control 7.2 Principles of inspection 7.3 Stages of inspection and quality control for - Earthwork - Masonry - RCC	
8	38-42	Accidents and Safety in Construction	8.1 Accidents–causes and remedies 8.2 Safety measures for - Excavation work - Hot bituminous works - Scaffolding, form work 8.3 Safety campaign and safety devices	
9	43-56	Public Work Accounts:	9.1 Introduction 9.2 Necessities of accounts 9.3 Public works department system of account 9.4 Classification of transaction and head of account 9.5 Classification of works 9.6 Condition to be fulfilled before a work can taken in hand 9.7 work order 9.8 bill-first and final bill, running account bill, account of secured advances, running account bill "c", running account bill "D", final bill, Hand receipt, refund of security money, cash, debit and credit 9.9 cashbook-procedure for maintain the cash book, cash found surplus or deficient, subsidiary cash Book 9.10 contract ledger 9.11 completion report and completion certificate 9.12 Imprest 9.13 temporary advance or temporary Imprest 9.14 Cheques 9.15 Remittance transfer receipts 9.16 Advise of transfer debit/credit 9.17 Receipt of money 9.18 Treasury challan 9.19 Treasury remittance book 9.20 Work abstract 9.21 Register of works 9.22 Transfer entries 9.23 Appropriation and re-appropriation 9.24 Deposit works 9.25 Stores 9.25.1 Necessity of stores 9.25.2 Unstamped receipt 9.25.3 Accounting procedure for store 9.25.4 Suspense head	

Signature of Teacher

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Lesson Plan

Name of teacher :- Ajay Kumar
Session:- Jan-June 2024
Subject :- SSD&D
Total Periods: Theory-56, Practicals-Nil
Class:- 6th sem.

S.No	Period No.	Topic/Practical	Details of topic/practical	Remarks
1	1-4	Structural Steel and Sections	Terminology, Properties of structural steel as per IS Code, grades of steel 1.2 Designation of structural steel sections as per IS handbook and IS: 800 1.3 Classification of sections in Limit State Method 1.4 Hollow Sections; Hot rolled and Cold Formed, advantages and applications	
2	5-15	Bolted Connections	2.1 Types of Bolts 2.2 Forces in Bolts 2.3 Types of Bolted joints with Sketches 2.4 Design of bolted connections (limit state)	
3	16-26	Welded Connections	Introduction, types of welds, defects in welds, Permissible stress in weld, strength of weld, advantages and disadvantages of welded joint. Types of welds and their symbols. Design of fillet weld and butt weld subjected to axial load.(Descriptive No numerical on plug and slot welds)	1st Assignment 2nd week of March
4	27-36	Tension Members	Types of section used, permissible stresses in axial tension. Gross and net cross--sectional area of tension member, Analysis and Design of tension member with welded and riveted connection. Introduction to Lug Angle and Tension splice. (Theory only)	
5	37-45	Compression Members	Types of sections used, Effective length, Radius of gyration, slenderness ratio and its limit, Permissible compressive stresses. Analysis and Design of axially loaded angle struts with welded and riveted connection. Stanchion and Columns Types of sections-simple and builtup sections, Effective length, Introduction to lacing and battening (No numerical problem on Lacing and Battening)	
6	46-53	Beams (LSM)	Different steel sections used; Simple and built-up sections.Permissible bending stresses. Design of simple I beam section, check for shear only. Introduction to Plate Girder: Various components and their functions. (No numerical Problem on Plate Girder)	2nd Assignment 4th week of April
7	54-56	Plate Girder (Conceptual knowledge)	Parts of plate girder a) Flange plate b) Flange angle c) Flange splice d) Web splice e) Vertical stiffener f) Intermediate stiffener g) Horizontal stiffener h) Bearing stiffener	

Signature of Teacher

Deptt. of Civil Engg.
Govt. Polytechnic ~~Rohru~~ Kinnaur.
Lesson Plan

Name of teacher :- Nidhi Chauhan
Session:- Jan-June 2024
Subject :- Irrigation Engineering
Total Periods: Theory-56, Practicals-Nil
Class:- 6th sem.

S.No	Period No.	Topic/Practical	Details of topic/practical	Remarks
1	1-2	Introduction	1.1 Definition and Necessity of Irrigation	
			1.2 Historical development of Irrigation systems	
2	3-6	Water Requirement of Crops	2.1 Principal crops in India and their water requirements	
			2.2 Crop/base period	
			2.3 Crop seasons –Kharif and Rabi	
			2.4 Duty, Factors affecting duty, Delta,	
			2.5 Relationship between Base period, Duty and Delta	
3	7-12	Methods of Irrigation	3.1 Type of irrigation- Surface irrigation and sub-surface irrigation	
			3.2 methods of supplying water to the field (Brief description)	
			3.2.1 Free Flooding	
			3.2.2 Border Flooding	
			3.2.3 Check Flooding	
			3.2.4 Furrow irrigation method	
			3.2.5 Basin flooding	
			3.2.5 Sprinkler irrigation with its suitability	
			3.2.6 Drip Irrigation with its suitability	
4	13-17	Hydrology and Run-off	4.1 Defination, importance of hydrology	
			4.2 Hydrological cycle	
			4.3 Precipitation	
			4.3.1 Definition	1st Assignment 2nd week of March
			4.3.2 Types of precipitation	
			4.3.3 Raingauges, types with diagrams	
			4.4 Runoff, Factors affecting runoff	
5	18-26	Dams & Canals	5.1 Use of dams in irrigation	
			5.2 Types of dams	
			5.3 Construction of earthen, gravity and rock fill dams	
			5.4 Alluvial and non-alluvial canals	
			5.5 Alignment of canal- ridge canal, contour canal, side slope canal	
			5.6 Distribution system for canal irrigation- Main canal, Branch canal, Distributaries, water course	
			5.7 Cross-section of canal showing- Side slope, Berm, Freeboard, Service road, Spoil bank, Dowel and Borrowpit (with their definition & functions)	
			5.8 Lining of canals and their types	
			5.9 Maintenance of irrigation canal	
			5.10 Closure of breaches	
6	27-33	Well and Tube Well Irrigation	6.1 Open well	
			6.1.1 Shallow well	
			6.1.2 Deep well	
			6.2 Construction of open well	
			6.3 Yield of open well (brief description, no derivation and numerical)	
			6.3.1 Pumping test	
			6.3.2 Recuperating test	
			6.4 Tube well	
			6.5 Types of tube well (Brief description with neat diagram)	
			6.5.1 Cavitytype tube well	
			6.5.2 Screen type tube well	
			6.5.3 Slotted type tube well	
			6.6 Methods of boring tube wells	
			6.7 well development	
			6.7 Advantages and disadvantages of tube well irrigation over canal irrigation	
7	34-37	Diversion Head Works	7.1 Definition, object, general layout, functions of different parts of diversion head works.	
			7.2 Types of Weir	
			7.3 Difference between weir and barrage	
8	38-42	Cross Drainage Works	8.1 Functions and necessity of the following types: aqueduct, super Passage, level crossing, inlet and outlet	
			8.2 Sketches of the above cross drainage works	
9	43-46	Regulatory works	9.1 Introduction	
			9.2 Cross and head regulators	
			9.3 Outlets	2nd Assignment 3rd week of April
			9.4 Canal Escapes	
			9.5 Falls	
10	47-51	River Training Works	10.1 Control and river training	
			10.2 Objective of river training	
			10.3 Method of river training (Brief description)	
			10.3.1 Marginal embankment	
			10.3.2 Groynes	
			10.3.3 Pitched island	
			10.3.4 Guide banks	
11	52-56	Water Logging	11.1 Definition	
			11.2 Causes	
			11.3 Preventive & remedial measures	
			11.4 Reclamation of water logged areas	
			11.5 Well point system	

Signature of Teacher

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Lesson Plan

Name of teacher :- Nitish Sharma
Session:- Jan-June 2024
Subject :- Prestressed Concrete
Total Periods: Theory-56, Practicals-Nil
Class:- 6th sem.

S.No	Period No.	Topic/Practical	Details of topic/practical	Remarks
1	1-10	Introduction	Basic concept of prestressed concrete, advantages of prestressed concrete in comparison with RCC application of prestressed to various building elements, bridges, water tanks and precast elements.	
2	11-21	Materials	Materials requirement for prestressing concrete – High strength concrete, Prestressing steel wires, strands and high strength bars. Stresses in high strength steel and stress-strain relationship, tendon profile.	
3	22-32	Prestressing Methods	Introduction to prestressing methods–pre-tensioning and post-tensioning, forces due to pretensioning and post-tensioning; their suitability and comparison, circular prestressing and its application	1st Assignment 2nd week of March
4	33-44	Bending and Shear Capacity	Concept of bending and shear capacity of prestressed members. Calculation of bending stresses in rectangular simply supported beams with straight and parabolic profile of tendons	2nd Assignment 4th week of April
5	45-56	Losses in Prestressing	Types of losses in prestress–Elastic shortening, creep and shrinkage of concrete, frictionless and stress relaxation in prestress steel. Computation of losses for simple beam problems.	

Signature of Teacher

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Lesson Plan

Name of teacher :- Manoj Kumar Subject :- RB&T Class:- 6th sem.

Session:- Jan-June 2024 Total Periods: Theory-56, Practicals-Nil

S.No	Period No.	Topic/Practical	Details of topic/practical	Remarks
1	1-9	PART–1: RAILWAYS	PART–1: RAILWAYS 1. Introduction to Indian Railways 2. Railways surveys: Factors influencing the railways route, brief description of various types of railway survey 3. Classification of permanent way describing its component part 4. Rail Gauge; Definition, types, practice in India 5. Rail – types of rails 6. Rail Fastening: Rail joints, types of rail joints, fastening for rails, fish plates, bearing plates	
2	10-15	PART–1: RAILWAYS	7. Sleepers: Functions of sleepers, types of sleepers, requirements of an ideal material of Sleepers. 8. Ballast: Function of ballast, requirements of an ideal material of ballast 9. Crossing and signaling: Brief description regarding different types of crossing/signalling	
3	16-22	PART–1: RAILWAYS	10. Maintenance of track: Necessity, track fixtures; maintenance and boxing of ballast, maintenance gauges, tools. 11. Drains, methods of construction.	1st Assignment 2nd week of March
4	23-32	PART-II: BRIDGES	12. Introduction Bridge–its function and component parts, difference between a bridge and a culvert 13. Classification of Bridges Their structural elements and suitability: 13.1 According to life-permanent and temporary 13.2 According to deck level–Deck, through and semi-through 13.3 According to material–timber, masonry, steel, RCC, pre-stressed 13.4 IRC classification	
5	33-45	PART-II: BRIDGES	14. Bridge Foundations: Introduction to open foundation pile foundation, well foundation 15. Piers, Abutments and Wing walls 15.1 Piers–definition, parts; types–solid (masonry and RCC), open 15.2 Abutment sand wing walls–definition, types of abutment (straight and tee), abutment with wing walls (straight, splayed, return and curved) 16. Bridge bearings Purpose of bearing; types of bearing–fixed plate, rocker and roller, 17. Maintenance of Bridges 17.1 Inspection of bridges 17.2 Routine maintenance	2nd Assignment 4th week of April
6	46-51	PART–III: TUNNELS	18. Definition and necessity of tunnels 19. Typical section of tunnels for a national highway and single and double broad gauge railway track. 20. Ventilation-necessity and methods of ventilation, by blowing, exhaust and combination of blowing and exhaust	
7	52-56	PART–III: TUNNELS	21. Drainage method of draining water in tunnels 22. Lighting in tunnels & lining of tunnels.	

Signature of Teacher

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Name of teacher :- Puneet Sharma, HOD Civil Engg.

Group:- 1st
Group- 2nd
Class/Branch:- 6th sem. Civil

Name of Subject/Lab/Workshop :- Steel Drawing
Total Periods: Theory-Nil, Practicals-56

S.No	Description of Practical/Job/Sheet	Period No.	Remarks
1	Details of splicing for steel columns.	1-6	
2	Column Beam Connection Drawings: a) Beam to beam connections (Seated and framed) b) Beam to column (Seated and framed) c) Column bases (Slab base, and gusseted base)	7-28	
3	Detailed drawing showing plan and elevation for a riveted plate girder with the given design data regarding the sizes of its parts, with details at the supports and connections of stiffeners, flange angles and cover plates with the web	29-44	
4	Preparation of drawing of a steel roof truss with details of joints for the given span, shape of the truss and the design data regarding the size of the members and the connections	45-56	

Signature of Teacher